

UC San Diego - WASC Exhibit 7.1 Inventory of Educational Effectiveness Indicators

Academic Program	(2) What are these learning outcomes?	(3) Other than GPA, what data/evidence is used to determine that graduates have achieved stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)	(4) Who interprets the evidence? What is the process?	(5) How are the findings used?
	(2) Where are they published? (Please specify)			
<p>Department: <i>Electrical and Computer Engineering</i></p> <p>Major: <i>B.S. in Electrical Engineering</i> <i>B.S. in Computer Engineering</i> <i>B.S. in Engineering Physics</i> <i>B.A. in Engineering and Society</i></p> <p>(1) Have formal learning outcomes been developed? <i>Yes</i></p> <p>(6) Date of last Academic Senate Review? <i>May 2010</i></p>	<p><i>The Electrical Engineering program is accredited by the Accreditation Board for Engineering and Technology (ABET), which provides rigorous guidelines for development and assessment of learning objectives and outcomes. These methods are utilized by the department for all of our majors. Objectives and outcomes are listed below:</i></p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • <i>To prepare students for graduate study in engineering or other professional fields.</i> • <i>To prepare students to excel in technical careers and apply their knowledge in the professional arena.</i> • <i>To prepare students to be leaders in their field, making technical contributions as well as having more general impact on society at large.</i> <p><u>Outcomes:</u></p> <ol style="list-style-type: none"> 1. <i>An understanding of the underlying principles of, and an ability to apply knowledge of mathematics, science, and engineering to electrical engineering problems</i> 2. <i>An ability to design and conduct experiments, as well as to analyze and interpret data</i> 3. <i>A knowledge of electrical engineering safety issues</i> 4. <i>An ability to design a system, component, or process to meet desired needs</i> <ol style="list-style-type: none"> a. <i>An ability to collaborate effectively with others</i> b. <i>An ability to function on multidisciplinary teams</i> 5. <i>An ability to identify, formulate, and solve engineering problems</i> 6. <i>An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice, including familiarity with computer programming and information technology</i> 7. <i>An understanding of professional and ethical responsibility</i> <ol style="list-style-type: none"> a. <i>An ability to communicate effectively in writing</i> b. <i>An ability to communicate effectively in speech</i> c. <i>An ability to communicate effectively with visual means</i> 	<p>Data/Evidence:</p> <ul style="list-style-type: none"> • <i>Capstone Project Design Courses: The department operates three courses which are designated as Capstone Courses, and which are required for graduation. These courses emphasize project design and team engineering focused on program outcomes and objectives.</i> • <i>Senior Surveys: Questions are developed based upon objectives and outcomes to determine how graduating students feel these were addressed/met.</i> • <i>Alumni Surveys: Alumni are polled to obtain feedback regarding how the objectives and outcomes prepared them for work in the field.</i> • <i>Industry Surveys: Formal and informal feedback is obtained from industry to determine how department graduates perform in the field.</i> • <i>Grade Distribution Data: Beyond simple GPA, grade distributions in lower division and breadth courses provide information on how students are progressing in the program and indicate areas of concern.</i> • <i>Current Student Feedback: Obtained through Course and Professor Evaluation (CAPE) and internal departmental course surveys.</i> 	<ul style="list-style-type: none"> • <i>Undergraduate Affairs Committee: Evaluates all inputs and processes to ensure that data collection is accurately identifying achievement of outcomes and objectives, and whether the objectives themselves remain reflective of what the department should be delivering to students and other constituents.</i> • <i>Course Directors: Each lower division and breadth course is assigned to a specific course director (sub-committee of Undergraduate Affairs) who meets regularly with instructors to determine whether courses are meeting objectives and outcomes.</i> • <i>Curriculum Committee: Sub-committee of Undergraduate Affairs which examines course content to ensure program objectives and outcomes are being addressed across the curriculum.</i> • <i>ABET review</i> • <i>Industrial Advisory Board: Comprised of University affiliates throughout industry, the Board meets yearly to evaluate all data collected and make recommendations for improvements and future program directions.</i> • <i>Student Honor Society: The department works closely with undergraduate student honor society (Eta Kappa Nu) to obtain their input and interpretation of survey data.</i> 	<ul style="list-style-type: none"> • <i>The department adjusts requirements and specifics of the objectives based upon feedback from all constituents.</i> • <i>Individual instructors utilize feedback to make specific adjustments in their courses.</i> • <i>Curriculum/program changes are made based upon inputs.</i>

<p>Department: Electrical and Computer Engineering (continued)</p>	<p>8. <i>The broad education necessary to understand the impact of engineering solutions in a global and societal context</i></p> <p>9. <i>A recognition of the need for, and the ability to engage in, lifelong learning</i></p> <p>10. <i>A knowledge of contemporary issues</i></p> <hr/> <p>Learning outcomes published:</p> <ul style="list-style-type: none">• http://www.ece.ucsd.edu/und/abet/• <i>UC San Diego General Catalog:</i> http://infopath-1.ucsd.edu/catalog/• <i>ABET documentation/reports</i>• <i>Mission Statements posted throughout department</i>			
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